

Responses of inflammatory cytokines in non-pregnant Boer does inoculated with *Corynebacterium pseudotuberculosis* via various routes

ABSTRACT

Corynebacterium pseudotuberculosis is the causative agent of caseous lymphadenitis in sheep and goats and is characterized by the development of pyogranulomas in the lymph nodes and organs. This study was designed to measure the concentration of inflammatory cytokines (IL-1 & IL-6) in experimental non-pregnant Boer does inoculated with *Corynebacterium pseudotuberculosis* through various routes. Little is known about the concentration of IL-1 and IL-6 in different routes of infection caused by the organism. A total of twenty healthy non-pregnant Boer does were divided into 4 groups (A-D) of 5 does per groups. Three groups (A-C) were inoculated with 107cfu/1ml of live *Corynebacterium pseudotuberculosis* through intradermal, intranasal and oral routes respectively, while group D was kept unexposed. Following infection, blood samples were collected from the jugular vein between three days interval period for the analysis of IL-1 and IL-6. A significant increase ($P<0.05$) in IL-1 was observed through intranasal, intradermal and oral route compared to the control group. Significant increase in IL-1 and IL-6 was observed through intranasal route compared to other routes. This study, therefore, highlights the effects of inflammatory cytokines (IL-1 and IL-6) in caseous lymphadenitis infection.

Keyword: Caseous lymphadenitis; *C. pseudotuberculosis*; Non-gravid Boer does; Interleukin-1 ; Interleukin-6